CHAPTER- 05

CONCLUSION
5. CONCLUSION

In the present work efforts have been made to develop and evaluate a single compound herbal topical antimicrobial gel formulation. The results can be summarized as

1. The collected medicinal plant samples are authenticated and evaluated for freedom from adulterants and contaminants.

2. Primary screening of selected extracts shows that ethanol extracts of *Cassia fistula* leaf showed maximum inhibition against the selected microbes.

3. Isolation and characterization of the constituents confirmed that the potent antimicrobial compound present in the ethanolic extracts of *Cassia fistula* leaf is Chrysophanol.

4. Development of analytical method and basic pre-formulation studies confirmed the drug as Chrysophanol.

5. Physiochemical evaluation of tests avowed the fact that no formulation has irritancy, in addition to having excellent physical characteristic that may aid large scale processing and handling of formulations.

6. *In Vitro* Drug release studies reveal that Chrysophanol gel formulation with 1%w/w Carbopol-940 and DMF as permeation enhancer showed maximum flux.

7. *Ex vivo* permeation studies done with rat skin affirmed the fact that the method used for *in vitro* kinetic evaluation of topical gels are appropriate and justifiable.
8. Comparative pharmacodynamic evaluation of gels revealed that formulation C12 has high degree of anti-microbial activity that can be compared with that of marketed formulation containing Neosporin.

Hence, the formulation C12 containing 1% Carbopol and 15% of DMF as permeation enhancer may improve patient compliance and chisel a path way for the production of a new topical formulation of Chrysophanol.